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EXAMINER

HUYNH, KHOA B

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,491	Applicant(s) TUORINIEMI ET AL.	
	Examiner KHOA HUYNH	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/22/06, 06/23/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

On page 5, line 3, “a wide area cellular network 9” should be corrected as “a wide area cellular network 8”.

On page 7, line 4, “the user terminal is provided with means 27” should be corrected as “the current access router is provided with means 27”.

On page 7, line 28, “broadcast transmissions form the candidate access systems” should be corrected as “broadcast transmissions from the candidate access systems”.

There might also be other typographical problems in the specification. Please review the specification and correct them as appropriate.

Drawings

2. Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1, 5, 7-9 are objected to because of the following informalities:
4. Regarding independent claim 1, phrases "the CARD protocol", "the IP control plane", and "the translated CARD protocol information" are unclear because the word "the" is used despite the fact that this is the first time these phrases are mentioned.
5. Regarding independent claim 5, phrases "the CARD protocol", "the IP control plane" are unclear because the word "the" is used despite the fact that this is the first time these phrases are mentioned. Also, it is unclear from the claim language whether "broadcasted CARD protocol information which has been translated into layer 2 information" is the same as "broadcasted translated CARD layer 2 information".
6. Regarding claims 7-8, phrases "the CARD protocol", "the IP control plane", "the CARD functionalities" are unclear because the word "the" is used despite the fact that this is the first time these phrases are mentioned.
7. Appropriate correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2416

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. **Claims 1-3, 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chaskar, US 2004/0196808** in view of **Karagiannis, US 2003/0018810**.

12. **For claim 1.** Chaskar teaches: A method of retrieving candidate access router capability discovery information (CARD information) in a user terminal (***Chaskar, page 4, paragraph 39, router capability information is transmitted to mobile terminal***) present

Art Unit: 2416

a multi access system which comprises several wireless networks each with a respective access technology (**Chaskar, fig 1**, *multi access system with wireless network SA1 using MCI and SA2 using AT&T technology*) and each comprising access routers each with associated access points (**Chaskar, fig 1**, *access routers AR1 and AR2 are associated with access points BS1, BS2 respectively*) the access routers exchanging CARD information by using the CARD protocol on the IP control plane (**Chaskar, page 3, paragraph 34**, *AR1 and AR2 exchange CARD information over IP*), comprising

Chaskar doesn't teach: translating CARD protocol information into layer 2 information messages and transmitting the translated CARD protocol information of each wireless network on at least a layer 2 wireless service to the user terminal.

Karagiannis from the same or similar fields of endeavor teaches: translating CARD protocol information into layer 2 information messages (**Karagiannis, page 8, paragraph 88**, *access router advertisement information is solicited and is piggy-backed onto layer 2 messages*) and transmitting the translated CARD protocol information of each wireless network on at least a layer 2 wireless service to the user terminal (**Karagiannis, page 8, paragraph 88**, *advertisement is transmitted using layer 2 protocol to the mobile node*).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar, since Chaskar suggests a technique for retrieving router capability information in a user terminal, and Karagiannis suggests the beneficial way of piggyback such information

Art Unit: 2416

into layer 2 messages and transmit them over layer 2 protocol (**Karagiannis, page 8, paragraph 88**) to ensure compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

13. **For claim 2.** Chaskar and Karagiannis teach: A method in accordance with claim 1, further comprising

Chaskar further teaches: broadcasting the translated CARD protocol information in each wireless network (**Chaskar, page 1, paragraph 8**, *CARD information is broadcasted by AR2 in service area SA2*).

14. **For claim 3.** Chaskar and Karagiannis teach: A method in accordance with claim 1 characterized by comprising

Chaskar further teaches: transmitting the translated CARD protocol information from the current access router to which the user terminal currently is connected (**Chaskar, page 4, paragraph 39**, *router capability information is transmitted to mobile terminal*).

15. **For claim 7.** Chaskar teaches: A radio access router of a wireless network, provided with protocol and interface means (15, 22, 23) (**Chaskar, fig 3**, *AR1 with protocol and interface means*) for exchanging information on capabilities of neighbouring access routers belonging to the same or to one or more different wireless networks using the CARD protocol on the IP control plane (**Chaskar, page 3,**

Art Unit: 2416

paragraph 34, AR1 and AR2 exchange CARD information over IP), said latter access routers being candidates for access of a user terminal in a multi access environment (**Chaskar, page 3, paragraph 27**, AR2 and AR4 are candidates for access), comprising Chaskar doesn't teach: a translator (16) for translating the CARD protocol information on the IP lane into corresponding layer 2 information.

Karagiannis from the same or similar fields of endeavor teaches: a translator (16) for translating the CARD protocol information on the IP lane into corresponding layer 2 information (**Karagiannis, page 8, paragraph 88**, access router advertisement information is solicited and is piggy-backed onto layer 2 messages)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar, since Chaskar suggests a technique for exchanging capability information among access routers, and Karagiannis suggests the beneficial way of piggyback such information into layer 2 messages and transmit them over layer 2 protocol (**Karagiannis, page 8, paragraph 88**) to ensure compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

16. **Claims 4, 8-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chaskar, US 2004/0196808** in view of **Karagiannis, US 2003/0018810**, and further in view of **Krishnamurthi, US 2003/0174667**.

Art Unit: 2416

17. **For claim 4.** Chaskar and Karagiannis teach: A method in accordance with claim 3, comprising

Chaskar and Karagiannis don't teach: transmitting said card information only when there is a candidate access router that offers capabilities that suits the needs of the user terminal better than does those offered by the current access router.

Krishnamurthi from the same or similar fields of endeavor teaches: transmitting said card information only when there is a candidate access router that offers capabilities that suits the needs of the user terminal better than does those offered by the current access router (***Krishnamurthi, page 3, paragraph 27, MN 16 is notified by AR_current when there is an AR that better match its preferences***)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Krishnamurthi into Chaskar and Karagiannis, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Krishnamurthi suggests the beneficial way of transmitting such information when there is a candidate access router that better match the preference of the user terminal (***Krishnamurthi, page 3, paragraph 27***) to improve compatibility and provide better services to the user in the analogous art of wireless discovery/handoff.

18. **For claim 8.** Chaskar and Karagiannis teach: A radio access router in accordance with claim 7 comprising

Chaskar further teaches: means (27) for evaluating the CARD functionalities offered by candidate access routers with the CARD functionalities offered by the access router to which the terminal currently is connected (**Chaskar, fig 3, selector unit 302 evaluates capabilities of access routers**) and for initiating transmission of layer 2 translated CARD information (**Chaskar, page 4, paragraph 39, router capability information is transmitted to mobile terminal**)

Chaskar and Karagiannis don't teach: only in case said evaluation reveals that there is a candidate access router with better CARD functionalities than those of the current access router, in which case said means is adapted to send the corresponding CARD information.

Krishnamurthi from the same or similar fields of endeavor teaches: only in case said evaluation reveals that there is a candidate access router with better CARD functionalities than those of the current access router (**Krishnamurthi, page 3, paragraph 27, MN 16 is notified by AR_current when there is an AR that better match its preferences**), in which case said means is adapted to send the corresponding CARD information (**Krishnamurthi, page 3, paragraph 27, AR_current notifies MN 16 through messaging interface**).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Krishnamurthi into Chaskar and Karagiannis, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Krishnamurthi suggests the beneficial way of transmitting such information when there is a candidate access router that better match

Art Unit: 2416

the preference of the user terminal (**Krishnamurthi, page 3, paragraph 27**) to improve compatibility and provide better services to the user in the analogous art of wireless discovery/handoff.

19. **For claim 9.** Chaskar and Karagiannis teach: A terminal ... for use in a multi access environment comprising access networks to which access routers in accordance with claim 7 are connected (**Chaskar, fig 1, terminal MT, access routers AR1, AR2, networks SA1-SA3**), said terminal comprising conventional means for transmission and reception (**Chaskar, page 6, paragraph 56, mobile terminal can communicate wirelessly**) comprising

Chaskar doesn't teach: means (21) for understanding protocol extensions that relate to translated CARD information transmitted on layer 2.

Karagiannis from the same or similar fields of endeavor teaches: means (21) for understanding protocol extensions that relate to translated CARD information transmitted on layer 2 (**Karagiannis, page 8, paragraph 88, advertisement is transmitted using layer 2 protocol to the mobile node which understands it**).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar, since Chaskar suggests a technique for sending router capability information to a user terminal, and Karagiannis suggests the beneficial way of piggyback such information into layer 2 messages and transmit them over layer 2 protocol which is then understandable by the terminal (**Karagiannis, page 8, paragraph 88**) to ensure

Art Unit: 2416

compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

Chaskar and Karagiannis don't teach: the terminal lacking IP control plane

Krishnamurthi from the same or similar fields of endeavor teaches: the terminal lacking IP control plane (***Krishnamurthi, page 3, paragraph 33**, messages between MN 16 and AR 14 can be non-IP messages, therefore, the terminal doesn't need to have IP control plane*)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Krishnamurthi into Chaskar and Karagiannis, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Krishnamurthi suggests the beneficial way of not having an IP control plane for such terminal (***Krishnamurthi, page 3, paragraph 27***) to provide compatibility with non-IP networks in the analogous art of wireless discovery/handoff.

20. **Claims 5-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chaskar, US 2004/0196808** in view of **Hsu, US 2004/0176024**, and further in view of **Karagiannis, US 2003/0018810**.

21. **For claim 5**. Chaskar teaches: A method of retrieving candidate access router capability discovery information (CARD information) in a user terminal (***Chaskar, page***

Art Unit: 2416

4, paragraph 39, router capability information is transmitted to mobile terminal) present a multi access system, which comprises several wireless networks each with a respective access technology (**Chaskar, fig 1**, multi access system with wireless network SA1 using MCI and SA2 using AT&T technology) and each comprising access routers each with associated access points (**Chaskar, fig 1**, access routers AR1 and AR2 are associated with access points BS1, BS2 respectively), the access routers exchanging CARD information by using the CARD protocol on the IP control plane (**Chaskar, page 3, paragraph 34**, AR1 and AR2 exchange CARD information over IP), comprising the following steps performed at the user terminal:

- first listening to broadcasted CARD protocol information..., said listening being performed in each wireless network (**Chaskar, page 1, paragraph 8**, mobile terminal MT listens to CARD information broadcasted by AR2 in service area SA2),

- next selecting the wireless network that has offers the capabilities that best meet the requirements of the user terminal (**Chaskar, page 3, paragraph 27**, AR best meet the requirements of user is selected),

- connecting the user terminal to an access router of the selected wireless network by establishing a wireless connection to said access router which then becomes the current access router (**Chaskar, page 3, paragraph 30**, handoff is performed, user terminal is connected to new AR),

Chaskar doesn't teach: and -finally stop listening for broadcasted CARD information and instead listening to CARD information transmitted from the current

Art Unit: 2416

access router on the established wireless connection, and CARD information is translated layer 2 information.

Hsu from the same or similar fields of endeavor teaches: and -finally stop listening for broadcasted translated CARD layer 2 information and instead listening to translated CARD layer 2 information transmitted from the current access router on the established wireless connection. (**Hsu, page 3, paragraph 48**, *Bs broadcasts WLAN advertisements over cellular; Hsu, page 5, paragraph 65*, *MS stop listening for broadcasted advertisement, and tune to WLAN for information*)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Hsu into Chaskar, since Chaskar suggests a technique for handover from one network to another, and Hsu suggests the beneficial way of stop listening to broadcasted messages over cellular and start listening to messages over WLAN after such handover to accommodate devices that has only one tuner and (**Hsu, page 4, paragraph 59**) to improve power saving in the analogous art of wireless discovery/handoff.

Chaskar and Hsu don't teach: CARD information is translated layer 2 information.

Karagiannis from the same or similar fields of endeavor teaches: CARD information is translated layer 2 information (**Karagiannis, page 8, paragraph 88**, *access router advertisement information is solicited and is piggy-backed onto layer 2 messages*)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar and Hsu,

Art Unit: 2416

since Chaskar suggests a technique for retrieving router capability information in a user terminal, and Karagiannis suggests the beneficial way of piggyback such information into layer 2 messages and transmit them over layer 2 protocol (***Karagiannis, page 8, paragraph 88***) to ensure compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

22. **For claim 6.** Chaskar, Hsu, and Karagiannis teach: A method in accordance with claim 1,

Chaskar doesn't teach: wherein the user terminal is a dual stack UMTS/WLAN terminal connected to an access router of an UMTS network comprising expanding the UMTS signalling protocol with CARD protocol information and inserting in said protocol extensions information that the current access router has gathered from neighbouring access routers by using the CARD protocol.

Hsu from the same or similar fields of endeavor teaches: wherein the user terminal is a dual stack UMTS/WLAN terminal connected to an access router of an UMTS network (***Hsu, page 2, paragraph 27, user terminal able to tune to both cellular and WLAN networks and is current communicating via cellular network***)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Hsu into Chaskar, since Chaskar suggests a technique for retrieving router capability information in a user terminal, and Hsu suggests the beneficial way for such terminal to be able to support both WLAN and

Art Unit: 2416

cellular to alleviate loading of the cellular system and increase capacity (**Hsu, page 1, paragraph 7**) in the analogous art of wireless discovery/handoff.

Chaskar and Hsu don't teach: expanding the UMTS signalling protocol with CARD protocol information and inserting in said protocol extensions information that the current access router has gathered from neighbouring access routers by using the CARD protocol.

Karagiannis from the same or similar fields of endeavor teaches: expanding the UMTS signalling protocol with CARD protocol information and inserting in said protocol extensions information that the current access router has gathered from neighbouring access routers by using the CARD protocol (**Karagiannis, page 8, paragraph 88, access router advertisement information is solicited and is piggy-backed onto layer 2 messages; UMTS signaling protocol is layer 2**)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar and Hsu, since Chaskar suggests a technique for retrieving router capability information in a user terminal, and Karagiannis suggests the beneficial way of piggyback such information into layer 2 messages and transmit them over layer 2 protocol (**Karagiannis, page 8, paragraph 88**) to ensure compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHOA HUYNH whose telephone number is (571) 270-7185. The examiner can normally be reached on Monday - Thursday: 7:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SEEMA RAO can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin C. Harper/
Primary Examiner, Art Unit 2416

/K. H./
Examiner, Art Unit 2416